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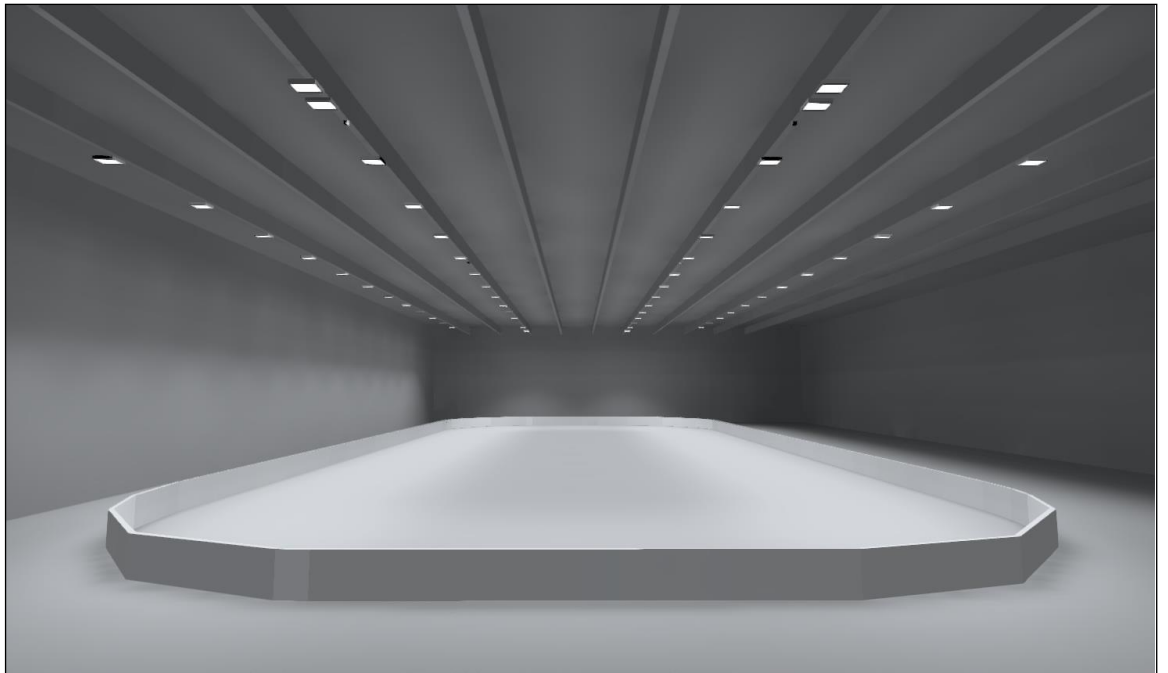


Zimní Stadion Litomyšl

Výpočet umělého osvětlení podle ČSN EN 12193

Návrh umělého osvětlení splňuje požadavky pro lední hokej na třídu osvětlení I podle ČSN EN 12193

- Průměrná udržovaná osvětlenost $E_m \geq 750 \text{ lx}$
- Rovnoměrnost osvětlenosti $U_2 \text{ hor} \geq 0,7$


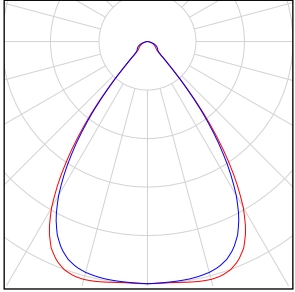

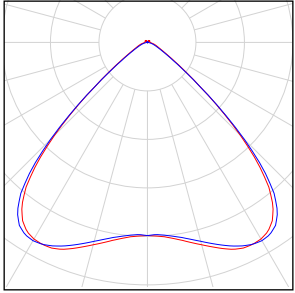
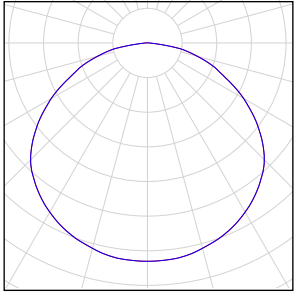


Obsah

Zimní Stadion Litomyšl

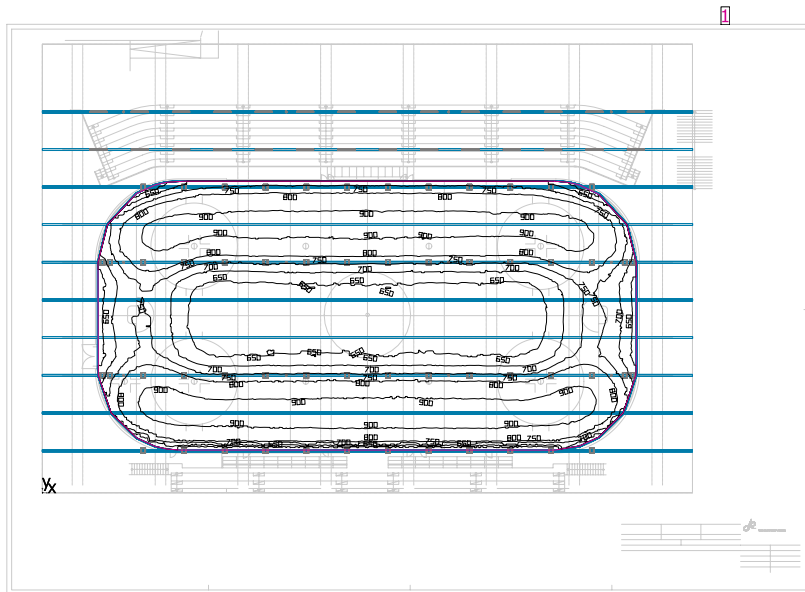
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Zimní Stadion Litomyšl

Počet kusů	Svítilo (Výstup světla)		
56	<p>Philips - BY481P PSD HE 1 xLED350S/840 MB Výstup světla 1 Osazení: 1xLED350S/840 Provozní účinnost: 99.91% Světelný tok žárovky: 35000 lm Světelný tok svítidla: 34970 lm Výkon: 206.0 W Světelný výtěžek: 169.8 lm/W</p> <p>Kolorimetrické údaje 1xLED350S/840: CCT 4000 K, CRI 80</p>		
28	<p>Philips - WT490C PSD L1800 1 xLED80S/840 WB Výstup světla 1 Osazení: 1xLED80S/840 Provozní účinnost: 99.97% Světelný tok žárovky: 8000 lm Světelný tok svítidla: 7998 lm Výkon: 48.5 W Světelný výtěžek: 164.9 lm/W</p> <p>Kolorimetrické údaje 1xLED80S/840: CCT 4000 K, CRI 80</p>		
12	<p>TM TECHNOLOGIE - 38_NM iTECH M5 NM Výstup světla 1 Osazení: 1xIntegral module 2xLED Provozní účinnost: 100% Světelný tok žárovky: 524 lm Světelný tok svítidla: 524 lm Výkon: 3.7 W Světelný výtěžek: 141.7 lm/W</p> <p>Kolorimetrické údaje 1x: CCT 5700 K, CRI 70</p>	<p>Obrázek svítidla najdete v našem katalogu svítidel.</p>	

Celkový světelný tok žárovky: 2190288 lm, Celkový světelný tok svítidla: 2188552 lm, Celkový výkon: 12938.4 W, Světelný výtěžek: 169.2 lm/W

Zimní stadion



Světlá výška prostoru: 12.000 m, Stupně odrazu: Strop 30.0%, Stěny 30.0%, Podlaha 30.0%, Činitel údržby: 0.85

Uživatelská úroveň

Plocha	Výsledek	Průměr (Pož.)	Min	Max	Min/střední	Min/Max
1 Uživatelská úroveň (Zimní stadion)	Svislá intenzita osvětlení (adaptivní) [lx] Výška: 0.000 m, Okrajová zóna: 0.000 m	777 (≥ 500)	601	953	0.77	0.63

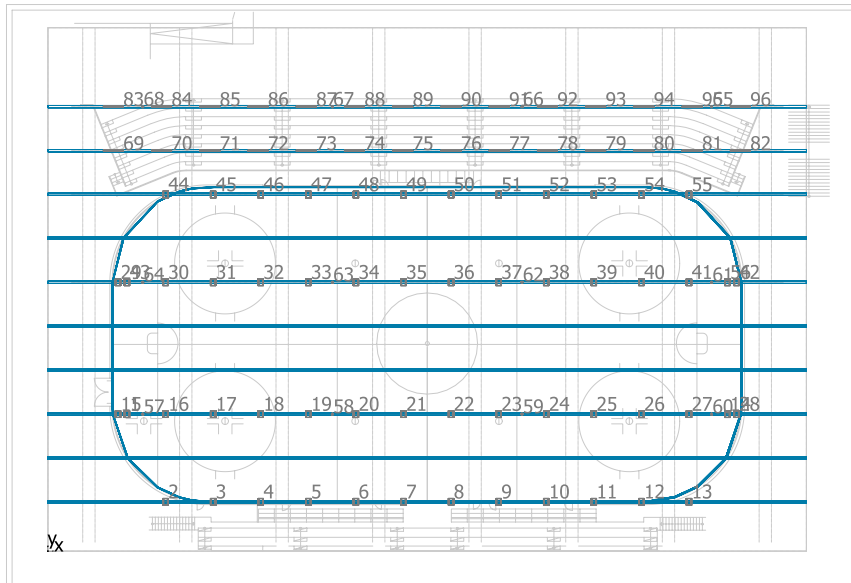
#	Svítilno	Φ(Svítilno) [lm]	Výkon [W]	Světelný výtěžek [lm/W]
56	Philips - BY481P PSD HE 1 xLED350S/840 MB	34970	206.0	169.8
	Součet všech svítidel	1958320	11536.0	169.8

Specifický příkon: 3.65 W/m² (Základní plocha prostrou 3162.03 m²),
Specifický příkon: 7.69 W/m² = 0.99 W/m²/100 lx (Výška uživatelské úrovně 1500.76 m²)

Spotřeba: 35600 kWh/a od maximálně 110700 kWh/a

Hodnoty spotřeby energie neberou ohled na světelné scény a jejich ztlumené stavy.

Zimní stadion



Philips BY481P PSD HE 1 xLED350S/840 MB

Č.	X [m]	Y [m]	Montážní výška [m]	Činitel údržby
1	7.052	12.221	11.000	0.85
2	10.498	4.400	11.000	0.85
3	14.745	4.400	11.000	0.85
4	18.992	4.400	11.000	0.85
5	23.239	4.400	11.000	0.85
6	27.485	4.400	11.000	0.85
7	31.732	4.400	11.000	0.85
8	35.979	4.400	11.000	0.85
9	40.226	4.400	11.000	0.85
10	44.472	4.400	11.000	0.85
11	48.719	4.400	11.000	0.85
12	52.966	4.400	11.000	0.85
13	57.213	4.400	11.000	0.85
14	60.644	12.221	11.000	0.85
15	6.252	12.223	11.000	0.85
16	10.498	12.223	11.000	0.85
17	14.745	12.223	11.000	0.85
18	18.992	12.223	11.000	0.85
19	23.239	12.223	11.000	0.85
20	27.485	12.223	11.000	0.85
21	31.732	12.223	11.000	0.85
22	35.979	12.223	11.000	0.85
23	40.226	12.223	11.000	0.85
24	44.472	12.223	11.000	0.85
25	48.719	12.223	11.000	0.85
26	52.966	12.223	11.000	0.85
27	57.213	12.223	11.000	0.85
28	61.459	12.223	11.000	0.85
29	6.252	23.991	11.000	0.85
30	10.498	23.991	11.000	0.85

Plocha 1 / Budova 1 / Poschodí 1 / Zimní stadion / Plán rozmístění svítidel

Č.	X [m]	Y [m]	Montážní výška [m]	Činitel údržby
31	14.745	23.991	11.000	0.85
32	18.992	23.991	11.000	0.85
33	23.239	23.991	11.000	0.85
34	27.485	23.991	11.000	0.85
35	31.732	23.991	11.000	0.85
36	35.979	23.991	11.000	0.85
37	40.226	23.991	11.000	0.85
38	44.472	23.991	11.000	0.85
39	48.719	23.991	11.000	0.85
40	52.966	23.991	11.000	0.85
41	57.213	23.991	11.000	0.85
42	61.459	23.991	11.000	0.85
43	7.052	23.990	11.000	0.85
44	10.498	31.820	11.000	0.85
45	14.745	31.820	11.000	0.85
46	18.992	31.820	11.000	0.85
47	23.239	31.820	11.000	0.85
48	27.485	31.820	11.000	0.85
49	31.732	31.820	11.000	0.85
50	35.979	31.820	11.000	0.85
51	40.226	31.820	11.000	0.85
52	44.472	31.820	11.000	0.85
53	48.719	31.820	11.000	0.85
54	52.966	31.820	11.000	0.85
55	57.213	31.820	11.000	0.85
56	60.644	23.990	11.000	0.85

TM TECHNOLOGIE 38_NM ITECH M5 NM

Č.	X [m]	Y [m]	Montážní výška [m]	Činitel údržby
57	8.462	12.220	11.200	0.85
58	25.386	12.220	11.200	0.85
59	42.309	12.220	11.200	0.85
60	59.233	12.220	11.200	0.85
61	59.233	23.991	11.200	0.85
62	42.309	23.991	11.200	0.85
63	25.386	23.991	11.200	0.85
64	8.462	23.991	11.200	0.85
65	59.233	39.655	11.200	0.85
66	42.309	39.655	11.200	0.85
67	25.386	39.655	11.200	0.85
68	8.462	39.655	11.200	0.85

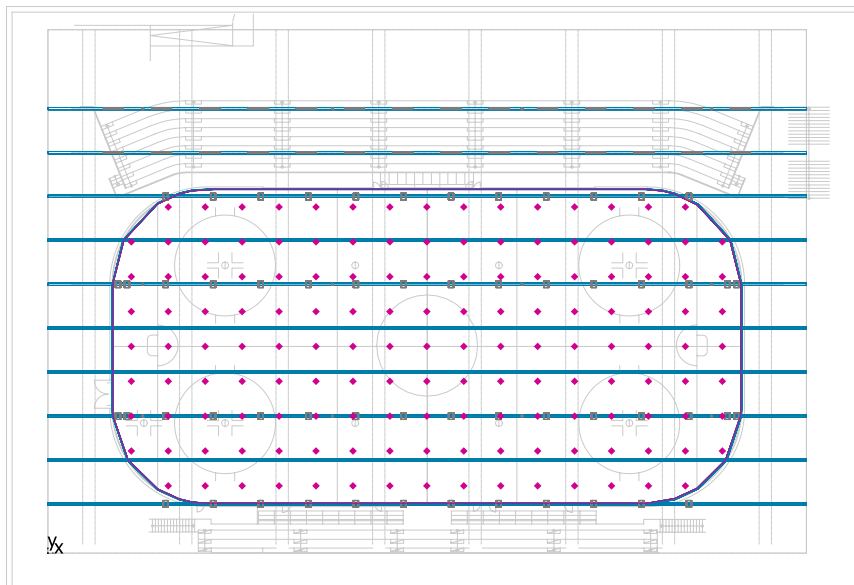
Philips WT490C PSD L1800 1 xLED80S/840 WB

Č.	X [m]	Y [m]	Montážní výška [m]	Činitel údržby
69	5.839	35.740	11.000	0.85
70	10.143	35.740	11.000	0.85
71	14.448	35.740	11.000	0.85
72	18.753	35.740	11.000	0.85
73	23.058	35.740	11.000	0.85
74	27.362	35.740	11.000	0.85
75	31.667	35.740	11.000	0.85

Plocha 1 / Budova 1 / Poschodí 1 / Zimní stadion / Plán rozmístění svítidel

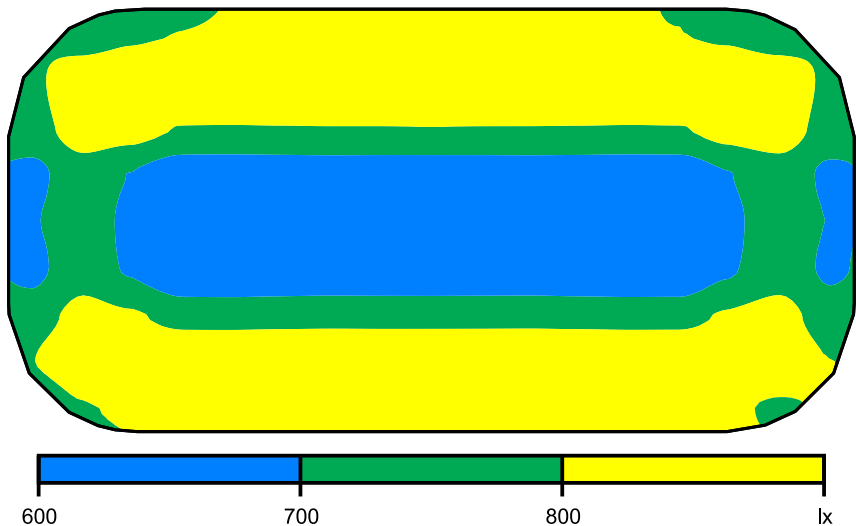
Č.	X [m]	Y [m]	Montážní výška [m]	Činitel údržby
76	35.972	35.740	11.000	0.85
77	40.277	35.740	11.000	0.85
78	44.581	35.740	11.000	0.85
79	48.886	35.740	11.000	0.85
80	53.191	35.740	11.000	0.85
81	57.496	35.740	11.000	0.85
82	61.800	35.740	11.000	0.85
83	5.839	39.670	11.000	0.85
84	10.143	39.670	11.000	0.85
85	14.448	39.670	11.000	0.85
86	18.753	39.670	11.000	0.85
87	23.058	39.670	11.000	0.85
88	27.362	39.670	11.000	0.85
89	31.667	39.670	11.000	0.85
90	35.972	39.670	11.000	0.85
91	40.277	39.670	11.000	0.85
92	44.581	39.670	11.000	0.85
93	48.886	39.670	11.000	0.85
94	53.191	39.670	11.000	0.85
95	57.496	39.670	11.000	0.85
96	61.800	39.670	11.000	0.85

Výpočtová plocha 1 / Horizontální intenzita osvětlení



Výpočtová plocha 1: Horizontální intenzita osvětlení (Rastr)
 Světelná scéna: Světelná scéna 1
 Průměr: 778 lx, Min: 629 lx, Max: 940 lx, Min/střední: 0.81, Min/Max: 0.67
 Výška: 0.000 m

Nepravé barvy [lx]



Měřítko: 1 : 500

Tabulka hodnot [lx]

m	-25.573	-22.277	-18.980	-15.683	-12.386	-9.089	-5.793	-2.496	0.801	4.098	7.394	10.691	13.988	17.285	20.581	23.878	27.175
12.437	/	711	769	801	806	809	809	811	812	812	810	809	806	801	769	713	/
9.326	775	893	930	917	919	922	923	923	924	924	923	922	919	917	930	896	780
6.215	748	866	848	797	795	797	799	799	801	799	799	797	795	797	847	868	753
3.104	682	754	697	643	642	643	645	645	645	645	645	644	642	643	696	755	685
-0.007	696	751	677	631	632	629	629	634	636	634	630	630	632	631	675	752	698
-3.119	684	751	688	635	635	636	638	639	638	639	638	636	635	635	687	752	688
-6.230	735	844	815	759	757	761	763	762	762	762	764	761	758	759	814	846	739
-9.341	795	914	939	917	919	921	922	923	923	923	922	921	919	918	940	917	802

Plocha 1 / Budova 1 / Poschodí 1 / Zimní stadion / Výpočtová plocha 1 / Horizontální intenzita osvětlení

m	-25.573	-22.277	-18.980	-15.683	-12.386	-9.089	-5.793	-2.496	0.801	4.098	7.394	10.691	13.988	17.285	20.581	23.878	27.175
-12.452	/	775	826	853	856	858	859	860	861	861	859	859	857	853	828	781	/



GentleSpace Gen3

BY481P LED350S/840 PSD HE MB PC SI BR

New Highbay - 840 neutral white - Power supply unit with DALI interface - Medium beam - Silver RAL 9006

With the third generation of the GentleSpace high-bay luminaire, we continue to bring innovations to the market by offering adaptable high bay lighting solutions for high ceiling and industrial applications. GentleSpace gen3 offers a wide variety of options in terms of optics and beam angles (from very narrow to wide), a choice of mounting possibilities and cover materials and a variety of lumen packages. This means that GentleSpace gen3 can easily help you create a tailor-made and ideal lighting solution for almost any high ceiling and/or industrial application. It can also support changes in application requirements (such as layout changes) thanks to its flexible optical system, which can be easily adjusted even after installation. In addition, GentleSpace gen3 also provides the option of advanced connectivity and is ready to be connected to IoT-based systems and software applications such as the Interact Industry. Overall, whether you are looking for a reliable 'fit and forget' solution, or one that can be adapted and controlled after installation, GentleSpace gen3 is the ideal solution for your application.

Product data

General Information			
Beam angle of light source	114 °	Control interface	DALI
Light source colour	840 neutral white	Connection	External connector
Light source replaceable	Yes	Cable	Cord with plug Wieland/Adels compatible 5-pole
Number of gear units	1 unit	Protection class IEC	Safety class I
Driver/power unit/transformer	PSD [Power supply unit with DALI interface]	Glow-wire test	Temperature 850 °C, duration 5 s
Driver included	Yes	Flammability mark	D [For mounting on easily flammable surfaces]
Optic type	MB [Medium beam]	CE mark	CE mark
Luminaire light beam spread	40° x 40°	ENEC mark	ENEC mark

GentleSpace Gen3

Warranty period	5 years
Constant light output	No
Number of products on MCB (16 A type B)	8
EU RoHS compliant	Yes
Product family code	BY481P [New Highbay]
Unified glare rating CEN	Not applicable

Operating and Electrical

Input Voltage	220–240 V
Input frequency	50 to 60 Hz
Inrush current	15.3 A
Inrush time	0.061 ms
Power factor (min.)	0.9

Controls and Dimming

Dimmable	Yes
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Mechanical and Housing

Housing material	Aluminium
Reflector material	-
Optic material	Polycarbonate
Optical cover/lens material	Polycarbonate
Fixation material	Steel
Optical cover/lens finish	Clear
Overall length	600 mm
Overall width	490 mm
Overall height	85 mm
Colour	Silver RAL 9006
Dimensions (height x width x depth)	85 x 490 x 600 mm (3.3 x 19.3 x 23.6 in)

Approval and Application

Ingress protection code	IP65 [Dust penetration-protected, jet-proof]
Mech. impact protection code	IK08

Initial Performance (IEC Compliant)

Initial luminous flux (system flux)	35000 lm
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Luminous flux tolerance	+/-10%
Initial LED luminaire efficacy	170 lm/W
Init. Corr. Colour Temperature	4000 K
Init. Colour rendering index	>80
Initial chromaticity	(0.38, 0.38) SDCM <3
Initial input power	206 W
Power consumption tolerance	+/-10%

Over Time Performance (IEC Compliant)

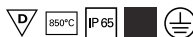
Control gear failure rate at median useful life 50,000 h	5 %
Control gear failure rate at median useful life 100,000 h	10 %
Lumen maintenance at median useful life* 50,000 h	L90
Lumen maintenance at median useful life* 100,000 h	L80

Application Conditions

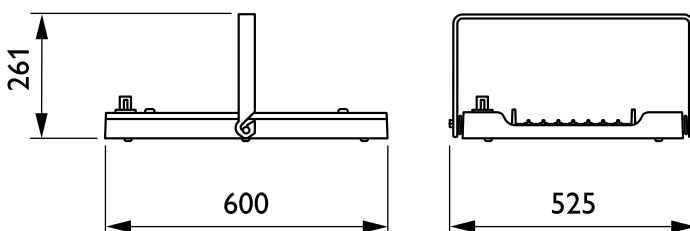
Ambient temperature range	-30 to +45 °C
Performance ambient temperature Tq	45 °C
Maximum dimming level	10%
Suitable for random switching	No

Product Data

Full product code	871869940790200
Order product name	BY481P LED350S/840 PSD HE MB PC SI BR
EAN/UPC – product	8718699407902
Order code	40790200
SAP numerator – quantity per pack	1
Numerator – packs per outer box	1
SAP material	910500465596
SAP net weight (piece)	12.000 kg

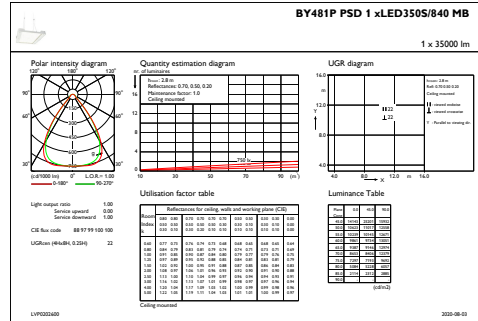
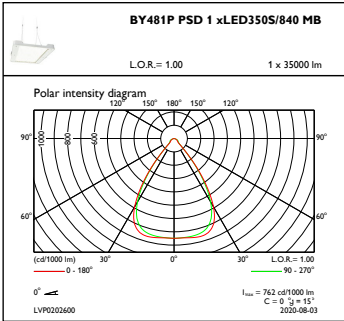


Dimensional drawing



BY481P LED350S/840 PSD HE MB PC SI BR

Photometric data



OFPC1_BY481PPSD1xLED350S840MB

IFGU1_BY481PPSD1xLED350S840MB





Pacific LED Gen5

WT490C LED80S/840 PSD WB TW3 PI7 L1800

PACIFIC LED PRO - 840 neutral white - Power supply unit with DALI interface - Wide beam - Push-in connector 7-pole

Pacific LED gen5 is an innovative and best-in-class LED waterproof luminaire that is praised for its optimal performance. It meets the demanding requirements of contemporary and harsh industries. It is a very robust, compact and reliable luminaire with excellent quality of light. With a high degree of mechanical (IK08), water and dust protection (IP66), combined with proven chemical resistance, the Pacific LED gen5 can perfectly withstand the harsh conditions of the automotive, food and heavy industries. But it also performs well in parking garages and warehouses. Pacific LED gen5 luminaires provide superior, artefact-free light quality and homogeneous light, offered with multiple optics and broad range of light outputs (up to 15,000 lm). This ensures more flexibility in optimized light scheme planning. They are also designed with a circular approach, which means these fully-serviceable luminaires can be upgraded to extend their overall lifecycle. The luminaires stand out because of their quick and easy installation that facilitates through wiring and various connection and mounting options. But also, because of their attractive TCO, energy efficiency, and ease of maintenance – with minimum of disruption to operations in demanding applications. To make the Pacific LED gen5 even more complete, system integration with Interact Industry opens up additional opportunities for optimized efficiency, energy savings, improved light management, productivity, and safety. Making it future proof in every aspect. Discover Pacific LED gen5. Optimal performance for demanding environments.

Warnings and Safety

- UV radiation will damage the material over time resulting in loss of waterproof sealing and IP66 rating.
- Do not install the luminaire in locations where it will be exposed to direct sunlight.

Product data

Pacific LED Gen5

General information	
Beam angle of light source	120 °
Light source color	840 neutral white
Light source replaceable	Yes
Number of gear units	1 unit
Driver/power unit/transformer	Power supply unit with DALI interface
Driver included	Yes
Optic type	Wide beam
Luminaire light beam spread	93° x 93°
Connection	Push-in connector 7-pole
Cable	-
Protection class IEC	Safety class I
Glow-wire test	Temperature 850 °C, duration 30 s
Flammability mark	For mounting on easily flammable surfaces
CE mark	CE mark
ENEC mark	ENEC plus mark
Warranty period	5 years
Constant light output	No
Number of products on MCB of 16 A type B	21
EU RoHS compliant	Yes
Service tag	Yes
Product family code	WT490C [PACIFIC LED PRO]
Unified glare rating CEN	22

Operating and electrical	
Input Voltage	208-240 V
Input Frequency	50 to 60 Hz
Inrush current	25.1 A
Inrush time	0.214 ms
Power Factor (Min)	0.99

Controls and dimming	
Dimmable	Yes

Mechanical and housing	
Housing Material	Polycarbonate
Reflector material	-
Optic material	Polycarbonate
Optical cover/lens material	Polycarbonate
Fixation material	Steel
Optical cover/lens finish	Clear
Overall length	1838 mm
Overall width	96 mm

Overall height	68 mm
Color	White
Dimensions (Height x Width x Depth)	68 x 96 x 1838 mm (2.7 x 3.8 x 72.4 in)

Approval and application	
Ingress protection code	IP66 [Dust penetration-protected, jet-proof]
Mech. impact protection code	IK08 [5 J vandal-protected]

Initial performance (IEC compliant)	
Initial luminous flux (system flux)	8000 lm
Luminous flux tolerance	+/-7%
Initial LED luminaire efficacy	165 lm/W
Init. Corr. Color Temperature	4000 K
Init. Color Rendering Index	>80
Initial chromaticity	(0.38, 0.38) SDCM <3
Initial input power	48.5 W
Power consumption tolerance	+/-11%

Over time performance (IEC compliant)	
Control gear failure rate at median useful life 100000 h	10 %
Lumen maintenance at median useful life* 100000 h	L80

Application conditions	
Ambient temperature range	-25 to +45 °C
Performance ambient temperature Tq	25 °C
Suitable for random switching	No

Product data	
Full product code	871951410991900
Order product name	WT490C LED80S/840 PSD WB TW3 PI7 L1800
EAN/UPC - Product	8719514109919
Order code	910925867736
Numerator - Quantity Per Pack	1
Numerator - Packs per outer box	1
Material Nr. (12NC)	910925867736
Net Weight (Piece)	3.200 kg

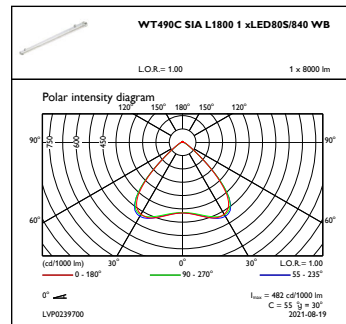
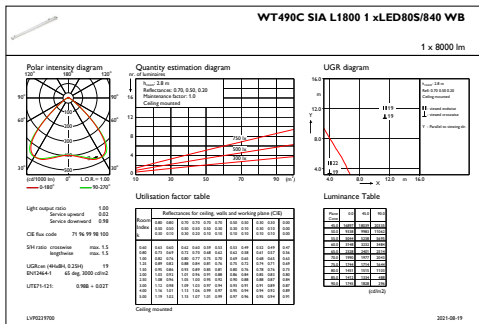


Dimensional drawing



WT490C LED80S/840 PSD WB TW3 PI7 L1800

Photometric data



IFGU1_WT490CSIAL18001xLED80S840WB

OFPC1_WT490CSIAL18001xLED80S840WB





ITECH M5 105 M AT COLD

TM-IT.M5ATM16CW

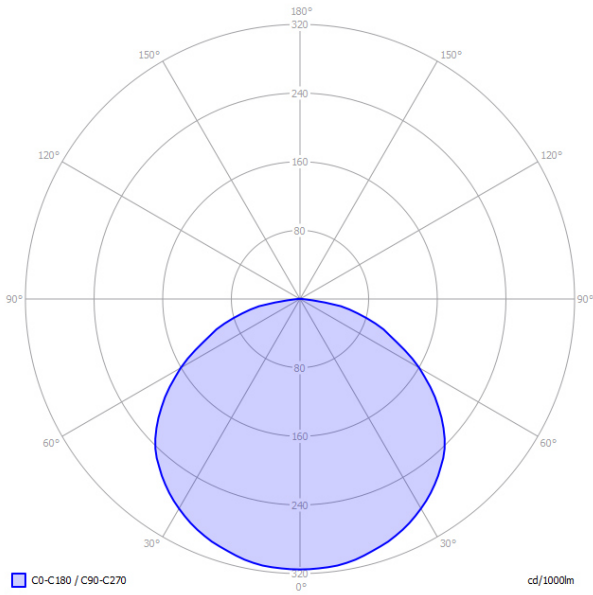


PARAMETERS

Warranty	24 months - ST 36 months - AT 60 months - DATA, CB
Application	anti-panic lighting
IP	IP65
IK	IK06
Version	AT - auto-test / self-test
Power supply	210+250 V AC 50+60 Hz
Power supply CB	186+254 V DC
Temperature range	-15-40 °C
Material	PC
Colour	RAL9003
Duration time	1 h
Operating mode	M
Maximum light power (the luminaire can power the light source with a different power)	4.5 W
Active power	6 W
Insulation class	2
Luminous flux	524 lm
Battery	LiFePO4/C 6.4V 3.0Ah
Dimming mode	no



PHOTOMETRY [m]



Ceiling height

2,5
3,0
4,0
5,0
6,0
7,0
8,0
9,0
10,0

Distance wall - fitting

4,6
5,0
5,6
6,0
6,5
6,6
6,7
6,6
6,6

Distance fitting - fitting

11,5
12,8
14,4
15,6
17,0
18,6
19,5
20,5
21,3

